Mail

Spider mythology across the world

To the editor,

I would like to make some comments on the article by Dr Vetter on idiopathic wounds and spider bites in the November issue of the journal.[1] Unfortunately, the mythology of spider bites is not confined to the United States and enjoys considerable publicity across the Pacific in Australia and New Zealand.

In Australia, little evidence supports the existence of a spider that causes necrotic ulcers. *Loxosceles rufescens* has been introduced into a small region in South Australia, but reports of necrotic arachnidism occur in all parts of Australia, and this spider has only been implicated in 2 cases.[2] The white-tail spider (*Lampona* spp) is the spider implicated most commonly in the development of necrotic wounds in Australia; however, only 2 confirmed bite cases are cited in the literature and these patients developed only minor ulcers.[3] Other implicated spiders include the black house spider (*Badumna insignis*) and wolf spiders (family *Lycosidae*). Sac spiders occur in Australia, but unlike in other parts of the world, they have not been implicated in cases involving necrotic lesions.[4]

Results of studies of the venoms of Australian spiders are also inconclusive and, if interpreted in the light of clinical evidence, suggest that the venoms of most Australian spiders do not contain clinically significant cytotoxic components.[5,6] A recent study showed that compared with the venom of recluse spiders (*L rufescens*) found in South Australia, the venom of white-tail and black house spiders does not have any sphingomyelinase activity.[5] This finding supports the idea that the venoms are not the cause of necrotic ulcers; however, the investigators conclude differently, based on finding sphingomyelinase activity in midgut extractions.

Venom research is based on the assumption that these spiders cause necrosis in humans, but scant evidence supports this hypothesis. There are mainly case reports of suspected spider bites or cases where the spider was not caught or correctly identified. Results of larger series of confirmed spider bites do not support the existence of necrotic arachnidism in Australia.[7-9] In 52 cases of confirmed white-tail (*L cylindrata/murina* group) spider bites, no necrosis or ulceration developed.[9] Despite this, the diagnoses of "white-tail spider bite" and necrotic arachnidism are entrenched in Australian medical culture, and other diagnoses usually are not even entertained.

Vetter refers to a case from Australia in which a skin lesion initially identified as a spider bite was eventually found to be caused by a fungal infection, sporotrichosis.[10] There are other cases of misdiagnosis of necrotic arachnidism in Australia, including pyoderma gangrenosum,[11] *Chromobacterium violaceum*[8] and *Mycobacterium ulcerans*.[12] In my experience, even more common conditions are misdiagnosed, including Herpes zoster, candidiasis, staphylococcal infections, and skin reactions to arthropod bites (usually bullous reactions). Although secondary infections may result from spider bites, this occurrence appears to be uncommon in a series of 371 confirmed spider bites (unpublished data, 2000).

I support the author in urging the medical community to investigate necrotic wounds properly and not simply implicate spiders as the cause of ulceration. With no history of spider bite, the diagnosis of necrotic arachnidism should be at the end of a long list of important differential diagnoses of necrotic ulcers. A good history and physical examination may quickly reveal common causes. Investigations should include wound swabs for microbiologic analysis, and for persistent necrotic lesions (over 3 to 4 weeks), a skin biopsy specimen should be sent for histopathologic assessment and appropriate microbiologic cultures (eg, fungal). In most cases, a correct diagnosis will allow the start of appropriate treatment.

Geoffrey K Isbister

Senior Registrar
Department of Clinical Toxicology and Pharmacology
Newcastle Mater Hospital
Newcastle, Australia

gsbite@bigpond.com

Competing interests: None declared

West J Med 2001;175:86-87

References

1 Vetter RS. Myth: idiopathic wounds are often due to brown recluse or other spider bites throughout the United States. *West J Med* 2000;173:357-358.
2 Southcott RV. Spiders of the genus Loxosceles in Australia. *Med J Aust* 1976;1:406-408.
3 White J. Necrotising arachnidism. *Med J Aust* 1999;171:98.
4 Newlands G, Martindale C, Berson SD, Rippey JJ. Cutaneous necrosis caused by the bite of Chiracanthium spiders. *S Afr Med J* 1980;57:171-173.
5 Young AR, Pincus SJ. Comparison of enzymatic activity from three species of necrotising arachnids in Australia: *Loxosceles rufescens*, *Badumna insignis* and *Lampona cylindrata*. *Toxicon* 2001;39:391-400.
6 Atkinson RK, Wright LG. Studies of the necrotic actions of the venoms of several Australian spiders. *Comp Biochem Physiol* 1991;98:441-444.
7 White J, Hirst D, Hender E. 36 cases of bites by spiders, including the white-tailed spider, *Lampona cylindrata*. *Med J Aust* 1989;150:401-403.
8 Isbister GK, Churchill TB, Hirst DB, Gray MR, Currie BJ. Clinical effects in bites from formally identified spiders in tropical Northern Territory. *Med J Aust* 2001;174:79-82.
9 Isbister GK, Gray M. Prospective study of the clinical effects of bites by the white-tail spider in Australia (*Lampona cylindrata/murina* Group) [abstract]. Proceedings of the 13th International Congress on Animal, Plant and Microbial Toxins; 2000; Paris, France.
10 Moaven LD, Altman SA, Newnham AR. Sporotrichosis mimicking necrotising arachnidism. *Med J Aust* 1999;171:685-686.
11 Kemp DR. Inappropriate diagnosis of necrotizing arachnidism. Watch out Miss Muffet—but don't get paranoid. *Med J Aust* 1990;152:669-671.
12 Hayman JA, Smith IM. Necrotising arachnidism in Australia. *Med J Aust* 1991;155:351.